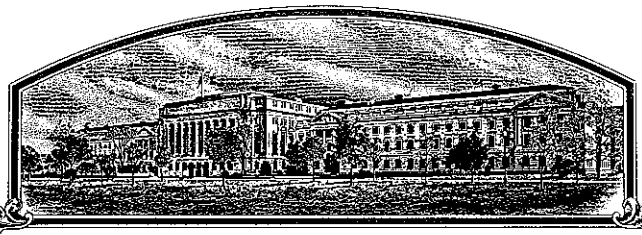

No. 9600359

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

University of Georgia Research Foundation, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'522W'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of July in the year of our Lord one thousand nine hundred and ninety-nine.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy A 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety prote certificate is to be issued (7 U.S.C. 2421). Information is held confid until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
University of Georgia Research Foundation, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
GA 84414-2

3. VARIETY NAME
522W

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Boyd Graduate Studies Building
D.W. Brooks Drive
Athens, GA 30602-7411

5. TELEPHONE *(include area code)*
(706) 542-6512

6. FAX *(include area code)*
(706) 542-5901

FOR OFFICIAL USE ONLY

PVPO NUMBER
9600359

FILING DATE
July 3 1997

FEES RECEIVED
FILING AND EXAMINATION FEE
$ 2450.00
DATE
Aug. 27 1996
CERTIFICATION FEE
$ 300.00
DATE
6/25/1999

7. GENUS AND SPECIES NAME
Triticum aestivum

8. FAMILY NAME *(Botanical)*
Gramineae

9. CROP KIND NAME *(Common name)*
Wheat, common

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Georgia

12. DATE OF INCORPORATION
November 17, 1978

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. John Ingle
University of Georgia Research Foundation, Inc.
630 Boyd Graduate Studies Building
Athens, GA 30602-7411

14. TELEPHONE *(include area code)*
(706) 542-6512

15. FAX *(include area code)*
(706) 542-5901

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. [X] Exhibit A. Origin and Breeding History of the Variety
b. [X] Exhibit B. Statement of Distinctness
c. [X] Exhibit C. Objective Description of the Variety
d. [X] Exhibit D. Additional Description of the Variety
e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
g. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
[ ] YES *(If "yes," answer items 18 and 19 below)* [X] NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[ ] YES [ ] NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED
[ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[X] YES *(If "yes," give names of countries and dates)* [ ] NO
September, 1996 in the U.S.

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* John Ingle		NAME *(Please print or type)*	
CAPACITY OR TITLE Chief Administrative Office	DATE 7/2/97	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden stateme

Exhibit A

Origin and Breeding History of 522W

'522W' a soft red winter wheat (Triticum aestivum L.) was developed at the University of Georgia Agricultural Experiment Station in cooperation with the USDA-ARS and released in 1995. 522W was derived from a three way cross in 1984: IN 71761A // 'Coker 797' / NE 71841. Parentage of IN 71761A is Benhur // Tecumseh / Knox type /3/ Tecumseh+Bulgaria 88. NE 71841 was an experimental hard red winter wheat line from Nebraska. The cultivar was developed using a modified pedigree breeding method. The F1 was grown in the greenhouse during the fall of 1985. Individual spike selections were made for resistance to leaf rust, powdery mildew, septoria glume blotch, and for medium plant height and medium maturity. Spikes were harvested, threshed individually and planted in single 1 meter headrows and were advanced to the next generation during the F2:3-, F3:4-, F4:5-, and F5:6-derived lines at Griffin, GA. 522W is the F6-derived bulk of nine F7 head rows selected from 100 head rows. Breeder seed, produced in 1995, is in the F11 generation.

522W was evaluated for agronomic performance as GA 84414-2 in nursery plots in 1992 (1 rep at Griffin) and 1992 (4 rep at Griffin and Calhoun, GA), in state trials at five locations in 1993 thru 1995, and in the Uniform Eastern Soft Red Winter Wheat Nursery at about 24 locations in 1994 and 1995.

522W has been observed for six generations in the field. It has remained uniform and stable, showing a small amount of variant types, consisting of 1/10,000 tall awned types, 2/10,000 tall types, and an occasional clavate spikes (less than 1/100,000). These variant plants are within an acceptable limit for seed certification.

Breeder seed of 522W will be maintained by the Georgia Agricultural Experiment Station, University of Georgia, Georgia Station, Griffin, GA 30223-1797.

Exhibit B

Novelty Statement

522W is most similar to Caldwell. 522W differs from Caldwell in the following characteristics: Head emergence (50% of spikes emerged from boot) of 522W is earlier than that of Caldwell. During 2 years, 522W headed 4 days earlier than Caldwell (L.S.D. 0.10 = 1.0). 522W has a heavier test weight (21-26 kg/m3) than Caldwell (L.S.D. 0.10 = 12).

522W is resistant (Lr11 and Lr18) to leaf rust races PNMQ, FBMG, MBRL, MGBL, SCJB, TFGL, MCDL, and PMRL but is susceptible to TLGG whereas Caldwell is susceptible to PNMQ, MBRL, MGBL TFGL, MCDL, and PMRL but is resistant to TLGG, data from the USDA-ARS Cereal Rust Lab.

522W expresses a resistant reaction (Sr10) to 5 stem rust races (RPQQ, RTQS, RTQQ, QFBS and RKQS) in a differential screening set whereas Caldwell (Sr17) is susceptible to RTQS, QFBS and RKQS according to USDA-ARS Cereal Rust Laboratory.

Seedling reaction of entries of the 1993-1994 Uniform Eastern Soft Red Winter Wheat Performance Nursery to selected isolates of Puccinia recondita f.sp. tritici (D. L. Long, USDA-ARS, Cereal Rust Laboratory, 1551 Lindig St., St. Paul, MN. 55108)

No.	Cultivar or line	Reactions produced by NA race *										Postulated Seedling Lr genes **
		TLGG	PNMQ	TBJL	TFGL	KDBL	CCBB	DBCQ	MBML	BBDL	CBGL	
1	Cardinal	;	3	3	3	3	;	3;	3	3	3	10
2	Caldwell	3	3	3	3	3	3;	3	3	3	3	+
3	Pio 2548	3	;1	3	3	;	;1c	;2c	;1	;1c	3	11
4	IL 85-3132	3	3	3	3	3	3	3	3	3	3	0
5	T 814	3	3	3	3	3	3	3	3	3	3	0
6	MO 9965-4	3;	3	3	3	;	;	;	3	;	;3	1,3,10
7	KY 83C-16-2	;	3	3	-	3;	;1c	;1c	3	3	3	10
8	TN 83-328	;1c	3	3;	3;	3	;	3	3	3;	3;	10,+
9	TN 84-403	3;	3	3	3;	;	;	;	3	;	-	1,+
10	P 80311A1-	3	3	3	3	3	3;	3	3	3	3	+
11	ABI 84-4580	;	;1c	3	3	;	;	;1c	;1c	;	;	1,2a,10
12	MO 12256	3	3	3	3	3	3	3	3	3	3	0
13	GA 831585	3	3	3	3	3	3;	3	3	;1c	3	+
14	VA 91-54-219	3	;1c	3	3	;-3	3;	;1c	;1c	;	3	11,+
15	L 890690	3	;	;	;	;	;	;	;	;	;	2a,9
16	L 900819	;	;	3;	3-;	;	;	;	3;	;	3	10,11,+
17	AR 370-2-1	;	3	;	;	;	;	;	3	;	;	3ka,+
18	AR 361A-9-1	3	;1c	;1c	;	;	;1c	3	;1c	;1c	;	18,+
19	AR 361A-2-1	3	;1c2	;1c	;	;1c	;1c	3	;1c	;1c	;1c	18,+
20	VA 91-54-222	3	;	3	3	;	;	;	;	;	3	11,+
21	TW 86-317	;	;	3	3	3;	3	3	;	3;	3;	+
22	8138I-16-5-50	;3	;	;3	3;	3;	-	3	3	3	3	10,+
23	MO 9965-52	3	;	3	3	;	;	;	;	;	3	11
24	X1898-1	3	3	3	-	3	3	3	3	;	3	+
25	IL 87-1917-1	-	3;	3;	3	;	;	3	;	;	3	11,+
26	IL 87-5250-2	;	3	3	3	3	;	3	3	;	3	10,+
27	GA 84414-2	3	;1c	;	;	;	;	;	;	;	;	11,18
28	GA 84438	;	;	;1	3	;1c	;	;	;	;	;	11,24,+
29	T 71	3	3	3	3	3	3	3	3	-	-	0
30	KY 85C-31-6	;	;1c	;	;	;	;	;	;	;	3;	+
31	KY 84C-48-1-1	3	3	3	3	3	3	3	3	3	3	0
32	ABI 90*7546	3;	3	3	3	3	3	3	3	3	3	+
33	ABI 90*8476	3	3	3	3	3	3	;	3	;	3	3,+
34	ABI89-4417A	;	;	;	;	;	;	;	;	;	;	R
35	OH 492	3	;-3	3	3	3;	3	;	3	;	3	3,+
36	OH 498	3	;1c	3	3	;	;	;3	;3	;	3	11,+
37	PT 8930a	3	3	3	3	3	3	3	3	3	3	0

*Single genes tested = 1,2a,2c,3,3ka,9,10,11,16,17,18,24,26,30

Virulence formula:
TLGG = 1,2a,2c,3,9,11,18
PNMQ = 1,2c,3,3ka,9,10,18,24,30
TBJL = 1,2a,2c,3,10,11,17
TFGL = 1,2a,2c,3,10,11,24,26
KDBL = 2a,2c,3,10,24
CCBB = 3,26
DBCQ = 2c,10,18,30
MBML = 1,3,3ka,10,30
BBDL = 10,17
CBGL = 3,10,11

**0 = no gene(s) detected with these *Lr* virulence combinations; + = *Lr* gene (s) present but unable to identify with these *Lr* virulence combinations.

Seedling reaction entries of the 1994 Unif .. Eastern Soft Red Winter Wheat Performance Nursery to selected isolates f *Puccinia graminis* f. sp. *tritici*. (D.V. McVey, USDA-ARS, Cereal Rust Laboratory, U. of Minnesota, St. Paul, MN. 55108)

9600359

No	Cult/Line	Reaction Produced by Isolates: 74-14-504C RPQQ	75-32-1662A RTQS	76-00-118B RTQQ	70-21-528A QFBS	71-00-24C QSHS	76-14-396A TNMH	76-21-833B TNMK	76-21-702C RKQS	Postulated *Sr* Gene
1	CARDINAL	S	S	S	S	S	S	S	S	None
2	CALDWELL	;1	S	0	S	S	2-	2	S	9a,17
3	PIONEER 2548	S	S	S	2-	S	S	S	S	+
4	IL 85-3131-1	0;	S	S	;1-	S	2	S	;1N	+
5	T814	;1-N	;1N	0;	1	S	S	S	1N	10
6	MO9965-4	0;	;1N	0;	;1N	S	2=	2	;1N	9a?,10,17
7	KY 83C-16-2	S	S	S	S	S	S	S	S	None
8	TN 83-328	;1	S	S	0;	0	0;	0;	X+	6,36
9	TN 84-403	S	S	S	S	S	S	S	S	None
10	P80311A1-20-3-	0;	S	0;	12N	S	2-	S	S	+
11	ABI 89-4580	0;	S	0;	2-N	S	2-	S	S	+
12	MO 12256	21	S	S	;1N	0	;1	;1	S	6,36
13	GA 831585	0;	S	0;	21N	0;	0	0	S	6,17,36
14	VA 91-54-219	S	S	S	S	S	S	S	S	None
15	L890690	;1-N	S	0;	S	S	;1	S	S	17
16	L900819	0;	S	0;	;1N	0	0;,2=	;1,2=	S	17,36,seg6,+
17	AR 370-2-1	0;	S	0;	;1	0	0;	;1	;1	6,10,36
18	AR 361A-9-1	0;	S	0;	12	-	0;	S	S	17
19	AR 361A-2-1	0;	S	0;	;1N	0	0;	;1	S	6,17,36
20	VA 91-54-222	S	S	S	S	S	S	S	S	None
21	TW 86-317	0;	S	0;	S	S	S	S	S	+
22	8138I1-16-5-50	0;	S	0;	S	S	S	S	S	+
23	MO 9965-52	0;	1N	0;	;1-	-	-	-	21N	+
24	X1898-1	;1	S	S	0;	0	S	-	S	36,+
25	IL 87-1917-1	0;	S	0;	S	S	S	S	S	+
26	IL 87-5250-2	S	S	S	S	S	S	S	S	None
27	GA 84414-2	21N	23	2-N	12N	S	S	S	21N	10
28	GA 84438	2=	2=	;1-	2=	2=	2-	2=	2=	24
29	T71	0;	;1N	0;	;1-N	S	2	S	;1N	10,+
30	KY 85C-31-6	2=	2=	2-	2=	2=	2=	2=	2-	24
31	KY 85C-48-1-1	X	S	S	;1-	0	0;	0;	S	36,+
32	ABI 90*7546	;1N	S	-	2	S	2	S	S	+
33	ABI 90*8475	S	S	S	-	S	S	S	S	None
34	ABI 89-4417A	;1-	S	0;	S	S	S	S	S	+
35	OH 492	S	S	S	S	S	S	S	S	None
36	OH 498	S	S	;1N	S	S	S	S	S	+
37	PT8930a	S	S	S	S	S	S	S	S	None

Sr Gene

Set I	5	9d	9e	7b
Set II	11	6	8	9a
Set III	36	9b	13	10
Set IV	15	16	17	Tmp

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
University of Georgia Research Foundation, Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)

FOR OFFICIAL USE ONLY

PVPO NUMBER 9600359

VARIETY NAME OR TEMPORARY DESIGNATION
522W

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____
[1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____
[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[1][0][9] FIRST FLOWERING
[1][1][5] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[ ][4] NO. OF DAYS *EARLIER* THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Caldwell
[ ][ ] NO. OF DAYS *LATER* THAN .....
[ ]

5. PLANT HEIGHT (*From soil level to top of head*):
[0][9][0] CM. HIGH
[ ][ ] CM. TALLER THAN .....
[ ]
[1][0] CM. SHORTER THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Caldwell

6. PLANT COLOR AT BOOTING (*See reverse*):
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][4] NO. OF NODES (*Originating from node above ground*)
[2][2] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[ ] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][1] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][2] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

9600359

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3= mid-dense

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[2] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[ ][7] CM. LENGTH

[1][2] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[3] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[4] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[1] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[ ] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[ ] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[2] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[ ][6] MM. LENGTH

[ ][3] MM. WIDTH

[3][5] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[3] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) RPQQ, RTQS

[2] LEAF RUST (Races) PNMQ, FBMG, MBBL, SCJB, TFGL, MCDL, PMRL, MGBL

[0] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[1] POWDERY MILDEW RTQQ, QFBS, RKQS

[0] BUNT

[ ] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

HESSIAN FLY RACES: [2] GP [0] A [2] B [2] C [2] D [2] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Caldwell	Seed size	Caldwell
Leaf size	Caldwell	Seed shape	Caldwell
Leaf color	Caldwell	Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

Exhibit D

Additional Description of 522W

522W is a common soft red winter wheat, Triticum aestivum L. bred and developed by the University of Georgia, Georgia Agricultural Experiment Station at the Georgia Experiment Station, Griffin, Georgia. 522W is a late maturing, medium height (90 cm) at maturity, white chaffed, apically awnletted with leaf rust resistance and characterized by moderate straw strength with high yield potential.

During 3 yr (eight locations) in Georgia, 522W and 'Ga-Dozier' yielded an average of 4204 and 4085 kg/ha, respectively. It is similar to Saluda in maturity and 4 days earlier than Caldwell. Milling and baking quality characteristics of 522W are rated as acceptable for soft red winter wheat use by the USDA-Soft Wheat Quality Laboratory, Wooster, OH.

522W is susceptible to some biotypes of Hessian fly (Mayetiola destructor (Say)) in Georgia and resistant to current races of leaf rust caused by Puccinia recondita (Roberge ex Desmaz), and susceptible to powdery mildew (Erysiphe graminis DC. f. sp. tritici Em. Marchal) in the Southeast.

Additional information is available in the application for approval form which is included.

Information on the milling and baking quality characteristics is also included in a quality report.

Table A. Performance of 522W and Caldwell at Griffin, Ga in 1994

Entry	Yield kg/ha	Test Wt kg/m3	Date Headed	Height in
522W	7194a*	746a	100b	89b
Caldwell	5306b	725b	105a	100a

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table B. Performance of 522W and Caldwell at Griffin, GA in 1995.

Entry	Yield kg/ha	Test Wt kg/m3	Date Headed	Height in
522W	3432a*	785a	100b	92b
Caldwell	3564a	759b	104a	102a

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table 1. Average Performance of GA 84414 and check cultivars at Griffin and Calhoun, GA in 1992.

Entry	Grain Yield Bu/A	Test Wt lbs/bu	Date Headed	Height in	Lodging %	Powdery mildew %
GA 84414	92a *	58	April 19	27	40	30 a
GORE	80 b	57	April 16	26	50	10 b
FL 302	82b	55	April 23	38	30	40 a
C 9835	85ab	55	April 17	30	20	15 b

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

** Milling and baking quality scores where A-C is acceptable and D-F is unacceptable, tested by Soft Wheat Quality Lab.

Table 2. Average Yield Performance (state test) of GA 84414 and Check Cultivars Over 3 Years (1993-1995).

	Location					
Entry	Tifton	Plains	Midville	Griffin	Calhoun	Avg.
GA 84414	51.2 b*	57.5 a	62.1 a	80.2 c	67.4 a	63.7 a
GA DOZIER	54.9 a	58.2 a	54.1 a	84.5 b	57.7 a	61.9 a
C 9134	53.3 ab	59.8 a	66.1 a	83.7 bc	68.4 a	66.3 a
C 9835	55.3 a	53.8 a	61.7 a	93.0 a	73.5 a	67.5 a

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table 3. Average Performance (state test) of GA 84414 and Check Cultivars Over 2 Years, 1994-1995.

Entry	TWT (lb/bu)	HT (in.)	LOD (%)	HD[1] (mo/day)	Powdery[2] mildew %	Leaf[3] rust %
GA 84414	58.8	40	25	4/16	26 a*	1 b*
GA DOZIER	58.1	35	11	4/13	2 b	2 b
C 9134	57.1	38	22	4/15	8 b	36 a
C 9835	56.2	34	6	4/7	13 b	31 a

[1] Average of Tifton, Plains, Midville, and Griffin

[2] Average of Plains (1995) and Griffin (1994,1995)

[3] Average of Plains (1994,1995) and Griffin (1995)

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table 4. Hessian fly infestations of GA 84414 and Check Cultivars at Plains in 1995.

Entry	Infested Stem (%)	Immatures per Stem
GA 84414	24.0 a*	0.36 a
GA DOZIER	5.3 g	0.07 b
C 9134	9.3 b	0.16 ab
C 9835	1.3 b	0.01 b

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table 5. Average Performance of Ga 84414 and Check Cultivars in the Uniform Eastern Wheat Nursery.

Entry	Yield	TWT (lb/bu)	HD (julian)	HT (in.)	Milling Qual.		Baking Qual.	
					North	South	North	South
GA 84414	73.4 a*	58.6	130	35.6	95.6	94.3	81.7	100.2
GA DOZIER	68.7 b	58.1	133	34.6	96.4	98.8	84.5	91.9
Caldwell	68.8b	56.2	132	37.8	97.4	99.7	95.2	103.1

* Means followed by the same letter are not significantly different based on a LSD (0.10) level.

Table 1. Average yield performance at 13 locations in 1994.

	Yield			
	84414	Cardinal	Caldwell	P10 2548
Griffin, GA	109.7	85.8	80.4	78.5
Plymouth, NC	78.0	49	97	49
Keiser, AR	65.0	64.4	72.4	76.0
Bay, AR	96.9	84.8	79.6	86.3
Lexington, KY	68.6	66.2	54.8	59.2
Blacksburg, VA	94	87	78	98
Ft. Branch, IN	105.7	98.3	99.8	106.0
W. LaFayette, IN	94.1	100.1	97.7	96.6
Woodburn, IN	74.5	70.0	68.9	69.8
Urbana, IL	81.5	83.0	85.5	76.6
Brownstown, IL	83.9	87.4	87.2	90.1
Wooster, OH	64.6	70.3	56.1	60.8
Ithaca, NY	61.7	59.1	63.9	60.4
Mean	82.9	77.3	78.6	77.5

Table 2. Average agronomic data of 13 locations in 1994.

	Test Wt[1]	Heading Date	Ht	Leaf Rust[2]
84414	59.3	128	35	1.5
Cardinal	57.6	133	39	4.5
Caldwell	57.3	131	36	2.0
P10 2548	56.9	131	33	6.0

1 - Mean of 13 locations

2 - Mean of Georgia and North Carolina

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
University of Georgia Research Foundation, Inc.	GA84414-2	522W

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
Boyd Graduate Studies Building D.W. Brooks Drive Athens, GA 30602-7411	(706) 542-4750	(706)542-3837
	7. PVPO NUMBER	

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [ ] YES [X] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO **If no, give name of country**

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[X] YES [ ] NO **If no, give name of country**

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

SEE ATTACHED

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to compete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-IMB.

Exhibit E
Statement of Applicant's Ownership

The variety for which plant variety protection is hereby sought is owned by the University of Georgia research Foundation, Inc. (UGARF).

Ownership by UGARF in the variety for which plant variety protection is hereby sought is based on the Patent Policy approved by the Board of regents of the University System of Georgia on June 9, 1982, in which the Board of Regents assigned to The university of Georgia Research Foundation, Inc. all rights in intellectual property developed or created by employees at The University of Georgia, one of the universities of the University System of Georgia. Rights of novel plant varieties developed at The University of Georgia, including "522W", are covered by said Patent Policy. As employees of The University of Georgia, Jerry W. Johnson, Barry Cunfer, and G. David Buntin, pursuant to said Patent Policy, have assigned their rights in "522W" to the University of Georgia Research Foundation, Inc.